1. **Course Number and Tile:**
   CMP 354 –Mobile Application Development

2. **Credits Hours**
   3-2-3

3. **Prerequisite and/or Co-Requisite:**
   Prerequisites: CMP256(GUI Design and Programming) or COE312 (Software Design for Engineers)

4. **Name and Contact Information of Instructor:**
   Dr. Tamer Shanableh

5. **Course Description (Catalog Description):**
   Covers mobile application development with emphasis on object-oriented programming. Includes the following topics: mobile software development kits (SDK); app graphical interfaces; event-handling; master-detail apps; background processes and notifications; broadcast receivers; persistence storage; and location based data with maps.

6. **Textbook, and other Supplemental Material**
   Textbook:
   - B. Phillips, C. Stewart, K. Marsicano, B. Gardner, *Android Programming: The Big Nerd Ranch Guide*, 4th edition. Big Nerd Ranch. 2019
   - J. Murach, *Murach's Android Programming,* 2st edition. Mike Murach & Associates, 2015

   Other supplemental materials:
   None.

7. **Learning outcomes:**
   Upon completion of the course, students will be able to:
   1. Apply object-oriented programming capabilities to create mobile apps
   2. Design app graphical user interfaces visually using an interface builder
   3. Employ event handling to respond to user interactions and multi-touch events
   4. Build master-detail apps that lists and manipulate items using tables and navigation views
   5. Create and use SQLite databases to manipulate and query data
   6. Develop background services which include responding to broadcast events and issuing notifications
   7. Use GPS and maps to create location-aware apps

8. **Teaching and Learning Methodologies:**

Methods include three one-hour lectures per week, one two hours lab. Weekly lab assignment and a project.

9. **Course Topics and Schedule:**

Topic/Activity	Weeks
Android Studio IDE, creating single activity app and debugging	Week 1,2
Menus and shared preferences	Week 3
Threads, files, adapters and intents	Week 4,5
Services, broadcast receivers and notifications	Week 6,7
SQLite databases, cursors and custom adapters	Week 8
GPS location data, maps API and sensor management	Week 9,10
Kotlin programming	Week 11,12
Kotlin with UI fragments and fragment manager	Week 13,14
Kotlin with lists and recycle views	Week 15
Total:	**15**